

NUMBER: EL 831832014 US

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Garry L. Klamon
Signature

In re Application of:

Thomas Malvar
Amy Jelen Gilmer

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Examiner:

Atty. Dkt. No.: **MECO:215--2**  
**11792.0215.DVUS02**

Serial No.:

Filed: September 26, 2003

For: **HYBRID *BACILLUS THURINGIENSIS*  
DELTA-ENDOTOXINS WITH NOVEL-  
BROAD SPECTRUM INSECTICIDAL  
ACTIVITY**

## MAIL STOP: PATENT APPLICATION

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

## **INFORMATION DISCLOSURE STATEMENT**

Sir:

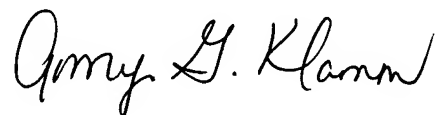
In compliance with the duty of disclosure under 37 C.F.R. § 1.56, Applicants respectfully request that this Information Disclosure Statement be entered and that the references listed on attached Form PTO-1449 be considered by the Examiner and made of record.

In accordance with 37 C.F.R. § 1.97(g), this Information Disclosure Statement is not to be construed as a representation that a search has been made or that no other possibly material information, as defined in 37 C.F.R. § 1.56, exists.

The present Information Disclosure Statement is being filed prior to the receipt of a first Office Action on the merits; and hence, is believed to be timely-filed in accordance with 37 C.F.R. § 1.97(b). No fees are believed to be due in connection with the filing of this Information Disclosure Statement; however, if any fees should be due, the Commissioner is hereby authorized to deduct said fees from Deposit Account No. 01-2508/11792.0215.DVUS02.

The present application is a divisional of U.S. Serial No. 09/997,914, filed November 30, 2001, and is relied upon for an earlier filing date under 35 U.S.C. § 120. In accordance with Rule 37 C.F.R. § 1.98(d), copies of the listed documents are not enclosed as they have been previously cited by or submitted to the U.S. Patent and Trademark Office in prior applications U. S. Serial Nos. 09/997,914; 09/261,040; or 08/754,490, each of which is relied upon for an earlier filing date under 35 U.S.C. § 120.

Respectfully submitted,

A handwritten signature in black ink, reading "Amy G. Klann". The signature is written in a cursive, flowing style.

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Agent for Assignee  
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September 26, 2003

|                                                                                                                                   |                                               |                                                                |            |
|-----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|----------------------------------------------------------------|------------|
| Form PTO-1449 (modified)                                                                                                          |                                               | Atty. Docket No.<br><b>MECO:215-2</b>                          | Serial No. |
| List of Patents and Publications for Applicant's<br><br>INFORMATION DISCLOSURE STATEMENT<br><br>(Use several sheets if necessary) |                                               | Applicants:<br><b>Thomas Malvar</b><br><b>Amy Jelen Gilmer</b> |            |
|                                                                                                                                   |                                               | Filing Date:<br><b>September 26, 2003</b>                      | Group:     |
|                                                                                                                                   |                                               |                                                                |            |
| U.S. Patent Documents<br><i>See Page 1</i>                                                                                        | Foreign Patent Documents<br><i>See Page 2</i> | Other Art<br><i>See Page 2-4</i>                               |            |

### U.S. Patent Documents

| Exam. Init. | Ref. Des. | Document Number | Date     | Name                          | Class | Sub Class | Filing Date if App. |
|-------------|-----------|-----------------|----------|-------------------------------|-------|-----------|---------------------|
|             | A1        | 5,441,884       | 08/15/95 | Baum                          | 435   | 252.31    |                     |
|             | A2        | 5,449,681       | 09/12/95 | Wickiser                      | 514   | 366       |                     |
|             | A3        | 5,384,253       | 01/24/95 | Krzyzek <i>et al.</i>         | 435   | 172.3     |                     |
|             | A4        | 5,500,365       | 03/19/96 | Fischhoff <i>et al.</i>       | 435   | 240.4     |                     |
|             | A5        | 5,055,294       | 10/08/91 | Gilroy                        | 424   | 93        |                     |
|             | A6        | 5,128,130       | 07/07/92 | Gilroy <i>et al.</i>          | 424   | 93A       |                     |
|             | A7        | 5,349,124       | 09/20/94 | Fischhoff <i>et al.</i>       | 800   | 205       |                     |
|             | A8        | 5,380,831       | 01/10/95 | Adang <i>et al.</i>           | 536   | 23.71     |                     |
|             | A9        | 5,593,881       | 01/14/97 | Thompson <i>et al.</i>        | 435   | 240.1     |                     |
|             | A10       | 5,508,264       | 04/16/96 | Bradfish <i>et al.</i>        | 514   | 12        |                     |
|             | A11       | 5,306,628       | 04/26/94 | Sivasubramanian <i>et al.</i> | 435   | 69.7      |                     |
|             | A12       | 5,495,071       | 02/27/96 | Fischhoff <i>et al.</i>       | 800   | 302       |                     |
|             | A13       | 5,736,131       | 05/07/98 | Bosch <i>et al.</i>           | 800   | 300       |                     |
|             | A14       | 5,763,241       | 06/09/98 | Fischhoff <i>et al.</i>       | 800   | 279       |                     |
|             | A15       | 5,880,275       | 03/09/99 | Fischhoff <i>et al.</i>       | 536   | 23.71     |                     |
|             | A16       | 6,204,246       | 03/20/01 | Bosch <i>et al.</i>           | 514   | 12        |                     |
|             | A17       | 6,284,949       | 09/04/01 | Fischhoff <i>et al.</i>       | 800   | 302       |                     |
|             | A18       | 6,320,100       | 11/20/01 | Koziel <i>et al.</i>          | 800   | 279       |                     |

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INFORMATION DISCLOSURE STATEMENT — PTO-1449 (MODIFIED)

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### Foreign Patent Documents

| Exam. Init. | Ref. Des. | Document Number | Date     | Country  | Class | Sub Class | Translation Yes/No |
|-------------|-----------|-----------------|----------|----------|-------|-----------|--------------------|
|             | B1        | WO93/07278      | 04/15/93 | PCT      |       |           |                    |
|             | B2        | WO95/02058      | 01/19/95 | PCT      |       |           |                    |
|             | B3        | WO95/06730      | 03/09/95 | PCT      |       |           |                    |
|             | B4        | WO95/30752      | 11/16/95 | PCT      |       |           |                    |
|             | B5        | WO95/30753      | 11/16/95 | PCT      |       |           |                    |
|             | B6        | 0 228 838 B1    | 12/09/86 | European | C12N  | 15/31     |                    |
|             | B7        | WO98/02039      | 01/22/98 | PCT      |       |           |                    |

### Other Art (Including Author, Title, Date Pertinent Pages, Etc.)

| Exam. Init. | Ref. Des. | Citation                                                                                                                                                                                                                                               |
|-------------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|             | C1        | Baum <i>et al.</i> , "Novel cloning vectors for <i>Bacillus thuringiensis</i> ," <i>Appl. Environ. Microbiol.</i> , 56(11):3420-3428, 1990.                                                                                                            |
|             | C2        | Bosch <i>et al.</i> , "Recombinant <i>Bacillus thuringiensis</i> crystal proteins with new properties: possibilities for resistance management," <i>Bio/Technology</i> , 12:915-918, 1994.                                                             |
|             | C3        | Caramori <i>et al.</i> , "In vivo generation of hybrids between two <i>Bacillus thuringiensis</i> insect-toxin-encoding-genes," <i>Gene</i> , 98(1):37-44, 1991.                                                                                       |
|             | C4        | Caramori <i>et al.</i> , " <i>Bacillus thuringiensis</i> kurstaki hybrid endotoxin genes generated by <i>In vivo</i> recombination, "ISBN 1-56081-028-9, 0(0):259-267, 1990.                                                                           |
|             | C5        | Gill <i>et al.</i> , "Identification, isolation, and cloning of a <i>Bacillus thuringiensis</i> CryIAc Toxin-binding protein from the midgut of the Lepidopteran insect <i>Heliothis virescens</i> ," <i>J. Biol. Chem.</i> 270(45):27277-27282, 1995. |
|             | C6        | Grochulski <i>et al.</i> , " <i>Bacillus thuringiensis</i> CryIA(a) insecticidal toxin: crystal structure and channel formation," <i>J. Mol. Biol.</i> , 254:447-464, 1995.                                                                            |

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| Exam. Init. | Ref. Des. | Citation                                                                                                                                                                                                                                                                    |
|-------------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|             | C7        | Honée <i>et al.</i> , "The C-terminal domain of the toxic fragment of a <i>Bacillus thuringiensis</i> crystal protein determines receptor binding," <i>Mol. Microbiol.</i> , 5(11):2799-2806, 1991.                                                                         |
|             | C8        | Knight <i>et al.</i> , "Molecular cloning of an insect aminopeptidase N that serves as a receptor for <i>Bacillus thuringiensis</i> CryIA(c) Toxin," <i>J. Biol. Chem.</i> , 270(30):17765-17770, 1995.                                                                     |
|             | C9        | Lee <i>et al.</i> , "Domain III exchanges of <i>Bacillus thuringiensis</i> CryIA toxins affect binding to different gypsy moth midgut receptors," <i>Biochem. Biophys. Res. Commun.</i> 216(1):306-312, 1995.                                                               |
|             | C10       | Masson <i>et al.</i> , "The CryIA(c) receptor purified from <i>Manduca sexta</i> displays multiple specificities," <i>J. Biol. Chem.</i> , 270(35):20309-20315, 1995.                                                                                                       |
|             | C11       | Mettus <i>et al.</i> , "Expression of <i>Bacillus thuringiensis</i> $\delta$ -endotoxin genes during vegetative growth," <i>Appl. Environ. Microbiol.</i> , 56(4):1128-1134, 1990.                                                                                          |
|             | C12       | Nakamura <i>et al.</i> , "Construction of chimeric insecticidal proteins between the 130-kDa and 135-kDa proteins of <i>Bacillus thuringiensis</i> subsp. <i>aizawai</i> for analysis of structure-function relationship," <i>Agric. Biol. Chem.</i> , 54(3):715-724, 1990. |
|             | C13       | Racapé <i>et al.</i> , "Properties of the pores formed by parental and chimeric <i>Bacillus thuringiensis</i> insecticidal toxins in planar lipid bilayer membranes," <i>Biophysical J.</i> 72(2),(part 2 of 2), A82, M-Pos329, 1997, ISSN:0006-3495.                       |
|             | C14       | Raymond <i>et al.</i> , Larvicidal activity of chimeric <i>Bacillus thuringiensis</i> protoxins," <i>Mol. Microbiol.</i> , 4(11):1967-1973, 1990.                                                                                                                           |
|             | C15       | Rudd <i>et al.</i> , "Domain III substitution in <i>Bacillus thuringiensis</i> delta-endotoxin CryIA(b) results in superior toxicity for <i>Spodoptera exigua</i> and altered membrane protein recognition," <i>Appl. Environ. Microbiol.</i> , 62(5):1537-1543, 1996.      |
|             | C16       | Rudd <i>et al.</i> , "Different domains of <i>Bacillus thuringiensis</i> $\delta$ -endotoxins can bind to insect midgut membrane proteins on ligand blots," <i>Appl. Environ. Microbiol.</i> , 62(8):2753-2757, 1996.                                                       |
|             | C17       | Schnepf <i>et al.</i> , "Specificity-determining regions of a Lepidopteran-specific insecticidal protein produced by <i>Bacillus thuringiensis</i> ," <i>J. Biol. Chem.</i> , 265(34):20923-20930, 1990.                                                                    |
|             | C18       | Shadenkov <i>et al.</i> , "Construction of a hybrid gene from CryIIIA and CryIA(a) $\delta$ -endotoxin genes of <i>Bacillus thuringiensis</i> and expression of its derivatives in <i>Escherichia coli</i> cells," <i>Mol. Biol. (Mosk)</i> , 27(4):952-9, 1993.            |

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| Exam. Init. | Ref. Des. | Citation                                                                                                                                                                                                                                                                 |
|-------------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|             | C19       | Thompson <i>et al.</i> , "Structure, function and engineering of <i>Bacillus thuringiensis</i> toxins," <i>Genetic Engineering</i> , 17:99-117, 1995.                                                                                                                    |
|             | C20       | Vachon, <i>et al.</i> , "Mode of action of <i>Bacillus thuringiensis</i> insecticidal crystal proteins: a study of chimeric toxins," <i>FASEB Journal</i> 10(3), A74, 429, 1996, ISSN:0892-6638.                                                                         |
|             | C21       | DeMaagd <i>et al.</i> , "Different domains of <i>Bacillus thuringiensis</i> $\delta$ -endotoxins can bind to insect midgut membrane proteins on ligand blots," <i>Appl. Environ. Microbiol.</i> , 62(8):2753-2757, 1996.                                                 |
|             | C22       | Honée <i>et al.</i> , "A translation fusion product of two different insecticidal crystal protein genes of <i>Bacillus thuringiensis</i> exhibits an enlarged insecticidal spectrum," <i>Appl. Environ. Microbiol.</i> , 56(3):823-825, 1990.                            |
|             | C23       | International Search Report dated April 20, 1998 (PCT/US97/21587)(MECO:205P)                                                                                                                                                                                             |
|             | C24       | DeMaagd <i>et al.</i> , "Domain III substitution in <i>Bacillus thuringiensis</i> delta-endotoxin CryIA(b) results in superior toxicity for <i>Spodoptera exigua</i> and altered membrane protein recognition. <i>Appl. Environ. Microbiol.</i> , 62(5):1537-1543, 1996. |
|             | C25       | Perlak <i>et al.</i> "Modification of the Coding Sequence Enhances Plant Expression of Insect Control Protein Genes," <i>Proc. Natl. Acad. Sci. USA</i> , 88:3324-3328, 1991.                                                                                            |
|             | C26       | Perlak <i>et al.</i> "Insect Resistant Cotton Plants," <i>Bio/Technology</i> , 8:939-943, 1990.                                                                                                                                                                          |

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